

B202280 source code for assessment in R.

Link to my github repository

https://github.com/B202280/B202280_assessment

Loading NHS datasets

```
library(NHSRdatasets) library(tidyverse) library(here) library(knitr) library(scales) library(lubridate) library(caret) #Load the ae_attendances data. data(ae_attendances)
ae<-ae_attendances class(ae)
```

Viewing the data

```
ae
ae <- rowid_to_column(ae, "index")
ae %>% # Set the period column to show in month-year format mutate_at(vars(period), format, "%b-%y")
%>% # Set the numeric columns to have a comma at the 1000's place mutate_at(vars(attendances, breaches,
admissions), comma) %>% # Show the first 10 rows head(10) %>% # Format as a table kable()
```

I saved my data here

```
write_csv(ae, here("RawData", "ae_attendances.csv"))
```

Subsetting the data: I chose the following variables in order to focus on a+e attendance rates and how these may vary over time.

```
ae<-ae %>% select(index, period, attendances)
ae %>% # set the period column to show in Month-Year format mutate_at(vars(period), format, "%b-%y")
%>% # set the numeric columns to have a comma at the 1000's place mutate_at(vars(attendances), comma)
%>% # show the first 10 rows head(10) %>% # format as a table kable()
```

the glimpse function give us a snapshot of the data.

```
glimpse(ae) write_csv(ae, here("RawData", "ae_attendances_ENG.csv"))
#Now work out the proportion (prop) of the raw data to assign to the training data: prop<-(1-(15/nrow(ae)))
#The proportion of the raw that needs to be assigned to the training data to ensure there is only 10 to 15
records in the test data is: print(prop)
#This will make sure that every time I run this script, I will partition the raw data into the same test
and training data. set.seed(333) #Partitioning the raw data into the test and training data. trainIndex <-
createDataPartition(ae$index, p = prop, list = FALSE, times = 1) head(trainIndex) # All records that are
in the trainIndex are assigned to the training data. aeTrain <- ae[ trainIndex,] nrow(aeTrain) #There are
12,753 records in my training data. That is a large dataset!
```

Now I will tabulate ae_attendances_ENG training data for my report

```
aeTrain %>% # set the period column to show in Month-Year format mutate_at(vars(period), format,
"%b-%y") %>% # set the numeric columns to have a comma at the 1000's place mutate_at(vars(attendances),
comma) %>% # show the first 10 rows head(10) %>% # format as a table kable()
```

And now save it to the Data folder.

```
write_csv(aeTrain, here("Data", "ae_attendances_ENG_train.csv"))
```

Extract the ae_attendances_ENG test data

```
#All records that are not in the trainIndex (-trainIndex) are assigned to the test data. aeTest <- ae[-trainIndex,] nrow(aeTest)
```

```
#Set aside the first record from the ae_attendances_ENG test data so that #I can test and evaluate my data-capture tool. aeTestMarker <- aeTest[1,]
```

Now tabulate ae_attendances_ENG marker test data for my report aeTestMarker %>% # set the period column to show in Month-Year format mutate_at(vars(period), format, "%b-%y") %>% # set the numeric columns to have a comma at the 1000's place mutate_at(vars(attendances), comma) %>% # show the first 10 rows head(10) %>% # format as a table kable()

Now to save my ae_attendances_ENG marker test data to my working data folder 'Data'

```
write_csv(aeTestMarker, here("Data", "ae_attendances_ENG_test_marker.csv"))
```

Now set aside the remaining records for me to test (or collect) with my data-capture tool.

```
aeTest <- aeTest[2:nrow(aeTest),]
```

Now tabulate ae_attendances_ENG test data for my report aeTest %>% # set the period column to show in Month-Year format mutate_at(vars(period), format, "%b-%y") %>% # set the numeric columns to have a comma at the 1000's place mutate_at(vars(attendances), comma) %>% # show the first 10 rows head(10) %>% # format as a table kable()

Now save my ae_attendances_ENG test data to my working data folder 'Data'

```
write_csv(aeTest, here("Data", "ae_attendances_test.csv"))
```

Data capture tool

Due to an error when I tried to load the panda package, I was unable to proceed to create my data capture tool in python.

Data dictionary for test data

```
library(dataMeta) library (tidyverse)
```

```
library(here)
```

```
CollectedData=read_csv(here("RawData", "CollectedDataAll.csv"))
```

Error: '/home/jovyan/B202280/Working__with__data__types__and__structure does not exist.

this error arose because I was not able to create my data capture tool in python.